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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/917,483	07/27/2001	Eric S. Bravek	DAKTRONICS	9821

7590

06/05/2003

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EXAMINER

EDMONDSON, LYNNE RENEE

ART UNIT

PAPER NUMBER

1725

DATE MAILED: 06/05/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/917,483

Applicant(s)

BRAVEK ET AL.

Examiner

Lynne Edmondson

Art Unit

1725

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 July 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5,6 is/are allowed.
- 6) ☒ Claim(s) 3 and 4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claim 3 is rejected under 35 U.S.C. 102(b) as being anticipated by Sherman (USPN 5784262).

Sherman teaches a printed circuit board comprising a substrate (20) having top and bottom surfaces comprising a plurality of through holes (22a-22d) extending through the substrate, each through hole having a solder station at least on the bottom surface (28a-28d) and each through hole having a plurality of spacer pads (18a-18d) oriented around the perimeter thereof on the top surface of the substrate (figures 1 and 3). The spacer pads comprise a top surface raised above the top surface of the substrate, which may be planar or take on the shape of the lead (col 4 lines 33-67 and col 6 lines 30-57). See also Sherman claims 1-26.

2. Claims 3 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Seyama (USPN 4912603).

Seyama teaches a printed circuit board comprising a substrate (21) having top and bottom surfaces comprising a plurality of via holes (through pad 6) extending through the substrate, each through hole having a solder station at least on the bottom

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surface and each through hole having three spacer pads (3, 6, 9) oriented around the perimeter thereof on the top surface of the substrate (figures 10 and 11 and col 6 lines 10-64). The spacer pads comprise a top surface raised above the top surface of the substrate, which lie in, the same plane as shown in figure 9. A combination of said substrate and a component having leads is also taught (figure 8). See also Seyama claims 1-14.

Allowable Subject Matter

3. Claims 5 and 6 are allowed.
4. The following is an examiner's statement of reasons for allowance: The closest prior art teaches the printed circuit board as claimed but does not teach the combination of this circuit board and a lead component wherein the leads which are extended through the component are soldered (or otherwise secured) at the bottom surface of the substrate, particularly having spacers of a sufficient thickness to allow gas to escape and provide space for flow of cooling air between the parts during the soldering process. See Seyama (USPN 4912603).

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Caldwell et al. (USPN 5736680, single pad), Matsuda et al. (US 2003/0054589 A1, date), Boyko et al. (USPN 5450290) and Hernandez et al. (USPN 4734818, raised pads and wave).

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lynne Edmondson whose telephone number is (703) 306-5699. The examiner can normally be reached on Monday through Thursday from 6:30 a.m. to 5 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on (703) 308-3318. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-7718 for regular communications and (703) 305-7115 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0651.

Lynne Edmondson
~~Patent~~ Examiner
Art Unit 1725



LRE
May 22, 2003